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Patent and Trademark Office June 21, 2004
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Frank C. Nicholas (23,983)
Name of Appellant, assignee or registered representative
John F. Hallman
Signature
June 21, 2004
Date of Signature

PATENT
PHB 34,367
(7790/175)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:)	
)	
KEVIN R. BOYLE)	
)	Examiner: RAMPURIA, SHARAD
Serial No.: 09/616,635)	
)	Group Art Unit: 2683
Filed: JULY 26, 2000)	
)	
For: BODY-WORN PERSONAL)	
COMMUNICATION APPARATUS)	

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant herewith respectfully presents a Reply Brief as follows.

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Serial No.: 09/616,635
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1 REAL PARTY IN INTEREST

The statement identifying the real party in interest contained in the Appeal Brief filed February 23, 2004 is incorrect. The real party in interest is Assignee U.S. Philips Corporation, which is a Delaware corporation having an office and a place of business at 100 East 42nd Street, New York, NY 10017.

2. RELATED APPEALS AND INTERFERENCES

As of the date of this Reply Brief, the Appellant and the undersigned attorney are not aware of any other appeals or interferences which will directly affect or be directly affected by or having a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

A statement of the status of the claims 1-18 is contained in the Appeal Brief filed February 23, 2004.

4. STATUS OF AMENDMENTS

A statement of the status of amendments is contained in the Appeal Brief filed February 23, 2004.

5 SUMMARY OF THE INVENTION

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A summary of the invention is contained in the Appeal Brief filed February 23, 2004.

6. ISSUE

A statement of the issues is contained in the Appeal Brief filed February 23, 2004.

7. GROUPING OF CLAIMS

A grouping of claims 1-18 is contained in the Appeal Brief filed February 23, 2004.

8. ARGUMENTS

In reply to the Examiner's Answer filed on April 21, 2004, the Appellant respectfully asserts that Examiner Rampuria's statement that "[T]he fact that the microphone is "in" the antenna air-core is immaterial" is incorrect, because the combination of *Houlihan* and *Shiraki* must teach or suggest all the limitations of independent claims 1 and 10 of the present application. As set forth below, the combination of *Houlihan* and *Shiraki* unequivocally teaches away from all the limitations of independent claims 1 and 10 of the present application.

First, Examiner Rampuria has correctly recognized the failure of *Houlihan* to disclose, teach or suggest a microphone mounted on a physically-shortened antenna as required by independent claims 1 and 10 of the present application. Second, Examiner

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Rampuria has correctly recognized the teaching of *Shiraki* to mount microphone 7 "in" an air-core of physically-shortened antenna 10. See, *Shiraki* at column 4, line 62 to column 5, line 11. Finally, *Shiraki* teaches away from mounting microphone 7 "on" antenna 10 (i.e., placing microphone 7 outside of the air-core of antenna 10) as required by independent claims 1 and 10. Specifically, *Shiraki* teaches a cylinder 8 of an antenna portion 6 for housing microphone 7 and antenna 10, and further teaches the mounting of microphone 7 "in" the air-core of antenna 10 is essential to eliminating a need to redesign antenna portion 6, particularly cylinder 8, whereby a miniaturization of antenna portion 6 is achieved. See, *Shiraki* at column 4, line 62 to column 5, line 11. Thus, to mount microphone 7 "on" antenna 10 is in direct contradiction to the teachings of *Shiraki* as well as outside of the literal and equivalent scope of claims 1-10 of *Shiraki*.

Consequently, at best, the combination of *Houlihan* and *Shiraki* teaches a mounting of a microphone "in" an air-core of an antenna to thereby minimize the size of the housing for the microphone and the antenna. Therefore, based on the failure of the combination of *Houlihan* and *Shiraki* to teach all of the claim limitations of claims 1-18 as set forth herein and in the Appeal Brief filed February 23, 2004, withdrawal of the rejections of claims 1-18 are again respectfully requested.

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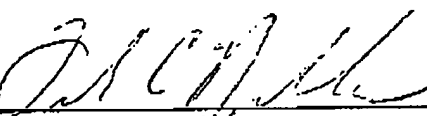
Dated: June 21, 2004

Respectfully submitted,
Kevin R. Boyle

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/616,635	07/26/2000	Kevin R. Boyle	PHB 34,367	9407

24737 7590 04/21/2004

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EXAMINER

RAMPURIA, SHARAD K

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 04/21/2004

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 16

Application Number: 09/616,635
Filing Date: July 26, 2000
Appellant(s): BOYLE, KEVIN R.

Darrin Wesley Harris
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/23/04.

(1) *Real Party in Interest*

Art Unit: 2683

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-18 stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

5,467,324	Houlihan	11-14-1995
6,028,556	Shiraki.	02-22-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2,5,7,9-11,14,17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324), in view of Shiraki (6,028,556).

1. Regarding Claim 1, Houlihan (5,467,324) disclosed A body-worn personal communications apparatus (100; Fig.1; Col.3; 1-12), comprising: a physically-shortened electric antenna (136; Fig.1); a transceiver connected to said physically-shortened electric antenna (Col.3; 16-21); a microphone (132; Fig.1) connected to said transceiver; and a casing, wherein said transceiver is disposed within said casing, (Col.3; 21-40)

Houlihan (5,467,324) fails to disclosed microphone is mounted on said physically-shortened electric antenna. However, Shiraki teaches in an analogous art, that wherein said physically-shortened electric antenna (10; fig.2) and said microphone (7; fig.3) are mounted on said casing. (2; fig.3) (Col.4; 45 – col.5; 25)

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wherein microphone (7; fig.3) is mounted on said physically-shortened electric antenna (10; fig.2) (Col.4; 45 – col.5; 25) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include microphone is mounted on said physically-shortened electric antenna in order to improve miniaturization.

2. Regarding Claim 2, Houlihan (5,467,324) disclosed all the particulars of the claim except a helical antenna. However, Shiraki teaches in an analogous art, that The apparatus of claim 1, wherein said physically shortened electric antenna is a helical antenna. (Col.4; 53–61) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a helical antenna in order to minimize the space required for the antenna.

5. Regarding Claim 5, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 1, wherein said microphone (7; fig.3) is located at an end of said physically-shortened electric antenna (8; fig.3) furthest from said casing. (2) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

7. Regarding Claim 7, Houlihan (5,467,324) disclosed The apparatus of claim 5, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51).

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9. Regarding Claim 9, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 5, wherein said microphone (7; fig.3) provides a top loading to said physically-shortened electric antenna. (8; fig.3) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

10. Regarding Claim 10, Houlihan (5,467,324) disclosed A body-worn personal communications apparatus (100; Fig.1; Col.3; 1-12), comprising: a casing; a physically-shortened electric antenna mounted on said casing; (Col.3; 21-40)

Houlihan (5,467,324) fails to disclosed microphone is mounted on said physically-shortened electric antenna. However, Shiraki teaches in an analogous art, that wherein said physically-shortened electric antenna (10; fig.2) and said microphone (7; fig.3) are mounted on said casing. (2; fig.3) (Col.4; 45 – col.5; 25) wherein microphone (7; fig.3) is mounted on said physically-shortened electric antenna (10; fig.2) (Col.4; 45 – col.5; 25) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include microphone is mounted on said physically-shortened electric antenna in order to improve miniaturization.

11. Regarding Claim 11, Houlihan (5,467,324) disclosed all the particulars of the claim except a helical antenna. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said physically shortened electric antenna is a helical antenna. (Col.4; 53–61) Therefore,

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it would have been obvious to one of ordinary skill in the art at the time of invention to include a helical antenna in order to minimize the space required for the antenna.

14. Regarding Claim 14, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said microphone (7; fig.3) is located at an end of said physically-shortened electric antenna (8; fig.3) furthest from said casing. (2) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

17. Regarding Claim 17, Houlihan (5,467,324) disclosed The apparatus of claim 10, wherein said physically-shortened electric antenna is formed from a hollow wire, wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire. (Col.3; 41-51).

18. Regarding Claim 18, Houlihan (5,467,324) disclosed all the particulars of the claim except the microphone is located at the end of the antenna furthest from the casing. However, Shiraki teaches in an analogous art, that The apparatus of claim 10, wherein said microphone (7; fig.3) provides a top loading to said physically-shortened electric antenna. (8; fig.3) (col.5; 12-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a microphone mounted on said physically-shortened electric antenna in order to obtain the good communication channel quality.

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Claims 3, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki, in view of Hirai et al.

3. Regarding Claim 3, The above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that The apparatus of claim 1, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a meander-line antenna in order to minimize the space required for the antenna.

12. Regarding Claim 12, The above combination disclosed all the particulars of the claim except a meander-line antenna. However, Hirai teaches in an analogous art, that The apparatus of claim 10, wherein said physically shortened electric antenna is a meander-line antenna. (16; Fig.1; Col.3; 11-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include a meander-line antenna in order to minimize the space required for the antenna.

Claims 4, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki in view of Barnard (WO 00/13329).

4. Regarding Claim 4, The above combination disclosed all the particulars of the claim except the antenna is mounted transversely to a plane through the casing. However, Barnard teaches in

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an analogous art, that The apparatus of claim 1, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing. (in the casing; Col.5; 22-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the antenna is mounted transversely to a plane through the casing in order to provide a low bandwidth.

13. Regarding Claim 13, The above combination disclosed all the particulars of the claim except the antenna is mounted transversely to a plane through the casing. However, Barnard teaches in an analogous art, that The apparatus of claim 10, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing. (in the casing; Col.5; 22-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the antenna is mounted transversely to a plane through the casing in order to provide a low bandwidth.

Claims 6, 8, 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houlihan (5,467,324) & Shiraki, in view of McLean (GB 2036447).

6. Regarding Claim 6, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 5, wherein said physically shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

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8. Regarding Claim 8, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 6, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.

(Page.2; 45-64) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

15. Regarding Claim 15, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 10, further comprising: a transceiver, wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver. (Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

16. Regarding Claim 16, The above combination disclosed all the particulars of the claim except the coaxial cable. However, McLean teaches in an analogous art, that The apparatus of claim 15, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.

(Page.2; 45-59) Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to include the coaxial cable in order to use the thickness of cable.

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Response to Argument

Further, Appellant even argues that the microphone and antenna are connected in Shiraki, but in the opposite manner as claimed. However, Shiraki discloses the antenna section (6) includes both the pipe (12) and the outer housing (8) in which the microphone resides. The fact that the microphone is "in" the antenna air-core is immaterial as to whether the antenna and microphone are connected to each other. Because microphone (7) is placed at the end of antenna pipe (12), as shown, the microphone is connected to antenna as claimed.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Sharad Rampuria
April 8, 2004


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DARRIN WESLEY HARRIS (40,636)
Name of Appellant, assignee or registered representative

D. W. Harris
Signature

February 23, 2004
Date of Signature

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PATENT
PHB 34,367
(7790/175)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

KEVIN R. BOYLE

Serial No.: 09/616,635

Filed: JULY 26, 2000

For: BODY-WORN PERSONAL
COMMUNICATION APPARATUS

Examiner: RAMPURIA, SHARAD

Group Art Unit: 2683

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant herewith respectfully presents a Brief on Appeal as follows:

February 23, 2004
Case No. PHB 34,367 (7790/175)
Serial No.: 09/616,635
Filed: July 26, 2000
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1. REAL PARTY IN INTEREST

The real party in interest is Koninklijke Philips Electronics N.V., a corporation of The Netherlands having an office and a place of business at Groenewoudseweg 1, Eindhoven, Netherlands 5621 BA. Koninklijke Philips Electronics N.V. is the ultimate parent of the assignee of record Philips Electronics North America Corporation, a Delaware corporation having an office and a place of business at 1251 Avenue of the Americas, New York, NY 10020-1104. Philips Electronics North America Corporation intends to further assign this application to Koninklijke Philips Electronics N.V.

2. RELATED APPEALS AND INTERFERENCES

Appellant and the undersigned attorney are not aware of any other appeals or interferences which will directly affect or be directly affected by or having a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

Claims 1-18 are currently the claims pending in the application, and are the claims on appeal. See, the Appendix. Claims 1, 2, 5, 7, 9-11, 14, 17 and 18 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,467,324 to *Houlihan* in view of U.S. Patent No. 6,028,556 to *Shiraki*. Claims 3 and 12 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of U.S. Patent No. 6,429,829 B1 to *Hirai et al.* Claims 4 and 13 stand

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finally rejected under 35 U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of PCT Publication WO 00/13329 to *Barnard*. Claims 6,8,15 and 16 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of Great Britain Patent 2036447 to *McLean*.

4. STATUS OF AMENDMENTS

A non-final request for reconsideration under 37 C.F.R. §1.112 involving amendments to claims 1-9 and an addition of claims 10-18 was filed on 7/28/2003 and entered into the application by Examiner Rampuria.

An after final request for reconsideration under 37 C.F.R. §1.116 was filed on 11/25/2003, but was not entered into the application by Examiner Rampuria.

5. SUMMARY OF THE INVENTION

As illustrated in FIGS. 1 and 4, a body-worn personal communications apparatus employs a physically-shortened electric antenna 102, a transceiver 104 connected to antenna 102, a microphone 114 connected to transceiver 104, and a casing 202. See, U.S. Patent Application Serial No. 09/970,960 at page 3, line 25 to page 4, line 15.

Transceiver 104 is disposed within casing 202.

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Antenna 102 is mounted on casing 202. As best illustrated in FIG. 3, antenna 102 is mounted transversely to a plane through casing 202. See, U.S. Patent Application Serial No. 09/970,960 at page 4, lines 16-25.

In one embodiment, microphone 114 is mounted on antenna 102 as illustrated in FIG. 4. To this end, microphone 114 is located at an end of antenna 114 furthest from casing 202, antenna 102 is formed from a coaxial cable that provides electrical connections between microphone 114 and transceiver 104, and microphone 114 provides a top loading to antenna 102. An embodiment of antenna 102 in this configuration is formed from a hollow wire that provides electrical connections between microphone 114 and transceiver 104. See, U.S. Patent Application Serial No. 09/970,960 at page 6, line 28 to page 7, line 26.

6. ISSUE

Whether claims 1-18 are patentable over *Houlihan* in view of *Shiraki*.

7. GROUPING OF CLAIMS

Claims 1-18 should be considered in six (6) groups.

Claim group I includes independent claims 1 and 10, and dependent claims 2, 3, 8, 11, 12, and 16.

Claim group II includes dependent claims 4 and 13.

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Claim group III includes dependent claims 5 and 14.

Claim group IV includes dependent claims 6 and 15.

Claim group V includes dependent claims 7 and 17.

Claims group VI includes dependent claims 9 and 18.

8. ARGUMENTS

To establish a *prima facie* case of obviousness, three basic criteria must be met.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, MPEP §2143.

The Appellant respectfully traverses this §103(a) rejection of independent claims 1 and 10, because *Houlihan* and *Shiraki* in combination fail to disclose, teach or suggest “wherein said microphone is mounted on said physically-shortened antenna” as recited in independent claim 1, and “a microphone mounted on said physically-shortened electric antenna” as recited in independent claim 10.

As to the traversal, Examiner Rampuria has correctly recognized the failure of *Houlihan* to disclose, teach or suggest a microphone mounted on a physically-shortened antenna as required by independent claims 1 and 10. Additionally, a proper reading of

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Shiraki reveals that *Shiraki* fail to disclose and teaches away from a microphone mounted on a physically-shortened antenna as required by independent claims 1 and 10.

Specifically, as illustrated in FIG. 2, *Shiraki* discloses a physically-shortened antenna 10 helically formed from a linear conductive material to thereby define an air-core. One end of antenna 10 is in electrically contact with the main body 2 via rod 12. See, *Shiraki* at column 4, lines 53 to 61.

To minimize the size of a cylinder 8 of rod 12, *Shiraki* teaches microphone 7 being disposed within the air core of antenna 10 with one end of microphone 7 being connected via lead lines 9 to an electric circuit (not shown) located within body 2 through rod 12. See, *Shiraki* at column 4, line 62 to column 5, line 11. Essentially, *Shiraki* has mounted antenna 10 on microphone 7 as opposed to mounting microphone 7 on antenna 10 as required by independent claims 1 and 12. Consequently, from FIG. 2 and its corresponding description, *Shiraki* clearly fail to teach or suggest antenna 10 mounted transversely through a plane in body 2, microphone 7 being located at an end of antenna 10 furthest from body 2, any type of electrical connections between microphone 7 and the electric circuit as provided by antenna 10, and any type of loading relationship between microphone 7 and antenna 10.

Furthermore, the Appellant respectfully asserts that a removal of microphone 7 from the air core of antenna 10 to thereby mount microphone 7 onto antenna 10 would increase the length of cylinder 8. Minimizing the size of cylinder 8 is taught by *Shiraki*. Thus, *Shiraki* teaches away from mounting microphone 7 onto antenna 10.

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Withdrawal of the rejection of independent claims 1 and 10 under U.S.C.

§103(a) as being unpatentable over *Houlihan* in view of *Shiraki* is therefore respectfully requested.

Claims 2, 5, 7, and 9 depend from independent claim 1. Therefore, dependent claims 2, 5, 7 and 9 include all of the elements and limitations of independent claim 1. It is therefore respectfully submitted by the Appellant that dependent claims 2, 5, 7 and 9 are allowable over *Houlihan* in view of *Shiraki* for at least the same reason as set forth herein with respect to independent claim 1 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and teach away from “wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing” as recited in dependent claim 5, “wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire” and “wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire” as recited in dependent claim 7, and “wherein said microphone provides a top loading to said physically-shortened electric antenna” as recited in dependent claim 9.

Withdrawal of the rejection of dependent claims 2, 5, 7 and 9 under U.S.C.

§103(a) as being unpatentable over *Houlihan* in view of *Shiraki* is therefore respectfully requested.

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Claims 11, 14, 17 and 18 depend from independent claim 10. Therefore, dependent claims 11, 14, 17 and 18 include all of the elements and limitations of independent claim 10. It is therefore respectfully submitted by the Appellant that dependent claims 11, 14, 17 and 18 are allowable over *Houlihan* in view of *Shiraki* for at least the same reason as set forth herein with respect to independent claim 10 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and teach away from "wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing" as recited in dependent claim 14, "wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire" and "wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire" as recited in dependent claim 17, and "wherein said microphone provides a top loading to said physically-shortened electric antenna" as recited in dependent claim 18.

Withdrawal of the rejection of dependent claims 11, 14, 17 and 18 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* is therefore respectfully requested.

Claim 3 depends from independent claim 1. Therefore, dependent claim 3 includes all of the elements and limitations of independent claim 1. It is therefore respectfully submitted by the Appellant that dependent claim 3 is allowable over

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Houlihan in view of *Shiraki* and in further view of *Hirai* for at least the same reason as set forth herein with respect to independent claim 1 being allowable over *Houlihan* in view of *Shiraki*. Withdrawal of the rejection of dependent claim 3 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *Hirai* is therefore respectfully requested.

Claim 12 depends from independent claim 10. Therefore, dependent claim 12 includes all of the elements and limitations of independent claim 10. It is therefore respectfully submitted by the Appellant that dependent claim 12 is allowable over *Houlihan* in view of *Shiraki* and in further view of *Hirai* for at least the same reason as set forth herein with respect to independent claim 10 being allowable over *Houlihan* in view of *Shiraki*. Withdrawal of the rejection of dependent claim 12 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *Hirai* is therefore respectfully requested.

Claim 4 depends from independent claim 1. Therefore, dependent claim 4 includes all of the elements and limitations of independent claim 1. It is therefore respectfully submitted by the Appellant that dependent claim 4 is allowable over *Houlihan* in view of *Shiraki* and in further view of *Barnard* for at least the same reason as set forth herein with respect to independent claim 1 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and

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teach away from “wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing” as recited in dependent claim 4.

Withdrawal of the rejection of dependent claim 4 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *Barnard* is therefore respectfully requested.

Claim 13 depends from independent claim 10. Therefore, dependent claim 13 includes all of the elements and limitations of independent claim 10. It is therefore respectfully submitted by the Appellant that dependent claim 13 is allowable over *Houlihan* in view of *Shiraki* and in further view of *Barnard* for at least the same reason as set forth herein with respect to independent claim 10 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and teach away from “wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing” as recited in dependent claim 13.

Withdrawal of the rejection of dependent claim 13 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *Barnard* is therefore respectfully requested.

Claims 6 and 8 depend from independent claim 1. Therefore, dependent claims 6 and 8 include all of the elements and limitations of independent claim 1. It is therefore respectfully submitted by the Appellant that dependent claims 6 and 8 are allowable over

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Houlihan in view of *Shiraki* and in further view of *McLean* for at least the same reason as set forth herein with respect to independent claim 1 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and teach away from “wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver” as recited in dependent claim 6.

Withdrawal of the rejection of dependent claims 6 and 8 under U.S.C. §103(a) as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *McLean* is therefore respectfully requested.

Claims 15 and 16 depend from independent claim 10. Therefore, dependent claims 15 and 16 include all of the elements and limitations of independent claim 10. It is therefore respectfully submitted by the Appellant that dependent claims 15 and 16 are allowable over *Houlihan* in view of *Shiraki* and in further view of *McLean* for at least the same reason as set forth herein with respect to independent claim 10 being allowable over *Houlihan* in view of *Shiraki*. Moreover, *Houlihan* and *Shiraki* in combination fail to disclose and teach away from “wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver” as recited in dependent claim 15.

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Withdrawal of the rejection of dependent claims 15 and 16 under U.S.C. §103(a)
as being unpatentable over *Houlihan* in view of *Shiraki* and in further view of *McLean* is
therefore respectfully requested.

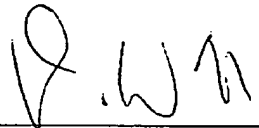
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Dated: February 23, 2004

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APPENDIX

1. A body-worn personal communications apparatus, comprising:
 - a physically-shortened electric antenna;
 - a transceiver connected to said physically-shortened electric antenna;
 - a microphone connected to said transceiver; and
 - a casing,
 - wherein said transceiver is disposed within said casing,
 - wherein said physically-shortened electric antenna is mounted on said casing, and
 - wherein said microphone is mounted on said physically-shortened antenna.
2. The apparatus of claim 1, wherein said physically-shortened electric antenna is a helical antenna.
3. The apparatus of claim 1, wherein said physically-shortened electric antenna is a meander-line antenna.
4. The apparatus of claim 1, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing.

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5. The apparatus of claim 1, wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing.
6. The apparatus of claim 5, wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said transceiver.
7. The apparatus of claim 5,
wherein said physically-shortened electric antenna is formed from a hollow wire,
wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and
wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire.
8. The apparatus of claim 6, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.
9. The apparatus of claim 5, wherein said microphone provides a top loading to said physically-shortened electric antenna.

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10. A body-worn personal communications apparatus, comprising:
 - a casing;
 - a physically-shortened electric antenna mounted on said casing; and
 - a microphone mounted on said physically-shortened electric antenna.
11. The apparatus of claim 10, wherein said physically-shortened electric antenna is a helical antenna.
12. The apparatus of claim 10, wherein said physically-shortened electric antenna is a meander-line antenna.
13. The apparatus of claim 10, wherein said physically-shortened electric antenna is mounted transversely to a plane through said casing.
14. The apparatus of claim 10, wherein said microphone is located at an end of said physically-shortened electric antenna furthest from said casing.
15. The apparatus of claim 10, further comprising:
 - a transceiver,
 - wherein said physically-shortened electric antenna is formed from a coaxial cable that provides electrical connections between said microphone and said

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transceiver.

16. The apparatus of claim 15, wherein said microphone provides a low impedance at radio frequencies to thereby enable said coaxial cable forming said physically-shortened electric antenna to act as an inductive stub.

17. The apparatus of claim 10, further comprising:

a transceiver,

wherein said physically-shortened electric antenna is formed from a hollow wire,

wherein a first electrical connection between said microphone and said transceiver is provided by said hollow wire, and

wherein a second electrical connection between said microphone and said transceiver is provided by a conductor enclosed by said hollow wire.

18. The apparatus of claim 10, wherein said microphone provides a top loading to said physically-shortened electric antenna.